

Remarks

In the Office Action, pending claims 1-17 were initially rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In particular, the Office Action stated that “multiple file formats” recited in claims 1 & 13-15, “different file formats” recited in claim 16, and “unknown file formats” recited in claim 17 introduce subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. Further, claims 2-12 & 16-17 were rejected for being dependent upon rejected claim 1. Applicants respectfully, but most strenuously, traverse the §112 rejection for the reasons stated below.

Applicants respectfully submit that the present invention describes a technique that relates to a hierarchical file system (see, e.g., Title; p. 1, line 10; p. 5, line 8). It is well-known that a hierarchical file system is a tree-structured organization of files that can have different file formats. For example, see the description and illustration of a hierarchical file system at www.webopedia.com/TERM/f/file_management_system.html, wherein multiple file formats such as document files and spreadsheet files are stored in the file system (see also www.webopedia.com/TERM/F/file.html).

Further, applicants’ specification provides a concrete example of a video library that includes video files stored in the hierarchical file system (p. 12, line 26 – p. 13, line 2). Applicants submit that a person skilled in the art would recognize that such a video library includes multiple file formats, such as .mpg, .avi and .mov.

Still further, applicants’ invention does not specify a certain file format for the files in the hierarchical file system (e.g., reference file F in file system 10 depicted in FIG. 3). In fact, in applicants’ description of the effectuation of changes to the files of the hierarchical file system, the resource manager does not require knowledge of the formats of the files being changed (i.e., the files have unknown file formats). See FIG. 2 and the related discussion at p. 10, line 6 – p. 12, line 2. Thus, it is submitted that applicants’ specification further provides implicit support for the “unknown file formats” recited in claim 17.

For the reasons stated above, applicants respectfully request withdrawal of the §112, first paragraph rejection relative to claims 1 & 13-17. Further, applicants request withdrawal of the §112, first paragraph rejection which is based on the above-noted dependent claims' dependency on independent claim 1.

Substantively, claims 1-3 & 10-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schmidt et al. (U.S. Patent No. 6,006,229; hereinafter, "Schmidt") in view of Balabine et al. (U.S. Patent No. 5,937,406; hereinafter, "Balabine"); claims 4-8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Schmidt in view of Balabine, and further in view of Coleman et al. (U.S. Patent No. 6,032,154; hereinafter, "Coleman"); and claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Schmidt in view of Balabine, and further in view of Khalidi et al. (U.S. Patent No. 5,561,799; hereinafter, "Khalidi"). Applicants respectfully, but most strenuously, traverse these rejections for the reasons stated below.

An "obviousness" determination requires an evaluation of whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art. In evaluating claimed subject matter as a whole, the Federal Circuit has expressly mandated that functional claim language be considered in evaluating a claim relative to the prior art. Applicants respectfully submit that the application of these standards to the independent claims of the present invention leads to the conclusion that the recited subject matter would not have been obvious to one of ordinary skill in the art based on the applied patents.

Applicants recite a technique for managing a hierarchical file system supporting multiple file formats. The technique includes, for example, providing transaction program means (e.g., file resource manager) arranged for cooperation with the hierarchical files system, and the transaction program means implementing transactional functionality to effectuate changes to files of the hierarchical file system (e.g., claim 1). Database management support was formerly required to provide transactional functionality that includes the capabilities of "commit" (e.g., ensuring that a transaction provides consistent updates across multiple databases) and "rollback" (e.g., returning a database to a former state

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when a transaction fails). Advantageously, the present invention implements transactional functionality relative to a hierarchical file system instead of to a database. Applicants respectfully submit that at least the above-described features of applicants' claimed invention are not taught, suggested or implied by Schmidt.

Schmidt describes an Xbase transaction processing system that implements transaction behavior that protects the integrity of an Xbase file set against corruption due to client failure (see Abstract thereof). The scheme in Schmidt that employs an Xbase file set is quite different from applicants' recited hierarchical file system management technique.

For example, applicants recite a hierarchical file system supporting multiple file formats and more particularly, a transaction program means arranged for cooperation with the hierarchical file system. In contrast, Schmidt addresses a file set. Applicants submit that it is well-known that a file set is a specific set of files with no definition of an organizational structure of those files, whereas a file system, such as the hierarchical file system recited in the present invention, defines the directory structure for keeping track of files.

Further, Schmidt addresses transaction processing of a file set that is specifically an Xbase file set. A careful reading of Schmidt reveals no teaching, suggestion or implication of transaction processing that could be associated with file formats other than Xbase. Moreover, Schmidt includes no discussion or suggestion of transaction processing relative to multiple file formats supported by a hierarchical file system, as claimed by the present invention.

For the above reasons, applicants submit that Schmidt does not teach, suggest or imply a hierarchical file system, let alone any transactional means arranged for cooperation with the hierarchical file system. More particularly, Schmidt lacks a teaching, suggestion or implication of a transaction program means arranged for cooperation with the hierarchical file system, as claimed by the present invention. For example, Schmidt does not describe or suggest a file resource manager in cooperation with a hierarchical file system.

The Office Action cited col. 7, lines 46-56 and col. 8, lines 54-56 as teaching the above-described feature of applicants' claimed invention. These cited sections disclose a DE919990096

transaction mode that includes transactional functions. These functions, however, are applied only to an Xbase file set. As noted above, an Xbase file set is quite different from the hierarchical file system recited by the present invention.

As noted above, another recited feature of applicants' invention is the transaction program means implementing transactional functionality to effectuate changes to files of the hierarchical file system. Any functionality described by Schmidt is limited to an Xbase file set (see col. 8, lines 54-56). Again, an Xbase file set is very different from a hierarchical file system, and functionality provided for an Xbase file set would not be readily extendible to a hierarchical file system environment. Thus, applicants respectfully submit that Schmidt lacks any description or suggestion of transactional functionality as recited in the present invention.

To summarize, Schmidt does not teach, suggest or imply a transaction program means arranged for cooperation with a hierarchical file system, nor does it disclose, suggest or imply such means implementing transactional functionality to effectuate changes to hierarchical file system files. Further, applicants respectfully submit that Balabine does not overcome these noted deficiencies of Schmidt compared with the present invention.

Balabine discloses a technique for accessing database information by transforming a file system request from an application into a query of a database (see Abstract thereof). The database simulates a file system so that the simplicity of the file system paradigm is combined with the effectiveness of database manipulation techniques (see col. 4, lines 4-24). This file system simulation is quite different from the applicants' recited functionality associated with the hierarchical file system.

For example, as noted above, applicants recite a transaction program means arranged for cooperation with the hierarchical file system, as well as such transaction program means implementing the above-described transactional functionality. In contrast, Balabine describes an interface to a database that mimics a file system. Balabine is directed to accessing data through the simulated file system without addressing issues of consistency of database updates (see FIG. 3). Thus, applicants respectfully submit that there is no reason for

Balabine to discuss transactional functions such as commit/rollback functions. To summarize, a careful reading of Balabine uncovers no teaching, suggestion or implication of a transaction program means arranged for cooperation with a hierarchical file system, or a transaction program means implementing transactional functionality (e.g., commit/rollback functions), as described above relative to applicants' claimed invention.

Based on the foregoing, applicants respectfully submit that Balabine, like Schmidt, fails to teach, suggest or imply the recited functionality of the transaction program means relative to the hierarchical file system, and therefore, the combination of Schmidt and Balabine would not have rendered obvious applicants' claimed invention.

For all of the above reasons, applicants respectfully submit that independent claims 1 & 13-15 are allowable over the applied art. Further, dependent claims 2, 3, 10-12, 16 & 17 are believed patentable for the same reasons as the independent claims from which they directly or ultimately depend, as well as for their own additional characterizations.

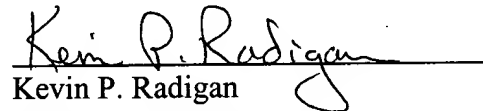
Relative to the obviousness rejection of claims 4-8, the Office Action cited Coleman, which describes a data storage and management system having remote data gathering devices each of which communicates according to a respective defined protocol (see Abstract thereof). A careful reading of Coleman, however, reveals no teaching, suggestion or implication of a transaction program means and the recited functionality relative to a hierarchical file system such as claimed by applicants. Therefore, applicants respectfully submit that the combination of Schmidt, Balabine and Coleman also fails to teach, suggest or imply at least the above-described features of applicants' claimed invention. Thus, reconsideration and withdrawal of the obviousness rejection relative to claims 4-8 is respectfully requested.

In regards to the obviousness rejection of claim 9, the Office Action cited Khalidi, which discloses an extensible file system that employs file system stacking (see Abstract thereof). Applicants submit that Khalidi does not describe, suggest or imply any of the above-noted aspects of claim 1 that are lacking in Schmidt and Balabine. Therefore, for the reasons set forth above, the applied patents do not teach, suggest or imply multiple elements

of applicants' claimed invention. Reconsideration and withdrawal of the rejection of claim 9 is therefore respectfully requested.

All claims are believed to be in condition for allowance and such action is respectfully requested.

Should the Examiner wish to discuss this case with applicants' attorney, the Examiner is invited to contact applicants' representative at the below-listed number.


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